

Application No.: 10/501,748
Amendment Dated: June 13, 2007
Reply to Office Action of: March 13, 2007

MTS-3493US

Remarks/Arguments:

Claims 1, 2, 8 and 18-22 have been amended. No new matter is introduced herein. Claims 1, 2, 6-8 and 18-23 are pending.

Applicants acknowledge with thanks the courtesy shown to their representative by Examiner Nalven and Supervisor Tyler during the telephone interview of May 9, 2007. During the course of the interview, Applicants' representative explained proposed amendments to claim 1 and discussed the differences between the cited art and Applicants' invention as recited by Applicants' proposed amendment. Namely, that the cited art does not disclose or suggest a refrigerating cycle subsystem that includes a first decompressor between a first heat exchanger and a refrigerant-water heat exchanger or a water cycle subsystem that includes a heater core and a radiator. Applicants' representative discussed that the radiator is separate from the heater core. No agreement was reached.

The title has been objected to as not being descriptive. The title has been appropriately amended. Accordingly, Applicants respectfully request that the objection to the title be withdrawn.

Claims 1-2, 6-8 and 18-22 have been objected to as being unclear. With respect to claim 2, the feature "degree of opening of the second decompressor" has been objected to. Claim 1 has been amended to clarify that the refrigerating cycle device includes a refrigerating cycle subsystem and a water cycle subsystem and to clarify the connection of elements for the refrigerating and water cycle subsystems. On page 2 of the Office Action, the Examiner presumes that first air and second air are ambient air. Applicants have clarified that the first air is different from the second air. Furthermore, claim 1 clarifies that the radiator is separate from the heater core and that the heater core is arranged to receive the second air modified by flow through the second heat exchanger. Claims 2 and 18-20 have been amended for proper antecedent basis and to correspond with amended claim 1. No new matter is introduced herein. Basis for the amendment to claim 1 can be found, for example, at page 24, line 1 - page 27, line 1; page 26, lines 18-23 (the radiator separate from the

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heater core and the heater core arranged to receive second air modified by flow through the second heat exchanger); and Fig. 1. Accordingly, Applicants respectfully request that the objection to claims 1-2, 6-8 and 18-23 be withdrawn.

Claims 1-2, 6-8 and 18-23 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Kuroda et al. (U.S. Pat. No. 6,105,386) in view of Masahiro et al. (JP 2002-081768). It is respectfully submitted, however, that these claims are now patentable over the cited art for the reasons set forth below.

Claim 1, as amended, includes features neither disclosed nor suggested by the cited art, namely:

- ... a refrigerating cycle subsystem including:

- ... a first decompressor configured to decompress the compressed refrigerant passed through said refrigerant-water heat exchanger ...

- ... a first heat exchanger that performs a first heat exchange between the refrigerant passed through said first decompressor and first air ...

- ... a water cycle subsystem including:

- ... a heater core that receives the water passed through the refrigerant-water heat exchanger, said heater core arranged downstream of and in proximity to the second heat exchanger to receive the second air modified by flow through said second heat exchanger ...

- ... a radiator, separate from said heater core, that receives the water passed through said heater core and passes the water to said power engine ...

Kuroda et al. disclose, in Fig. 1, a CO₂ cycle apparatus that cycles CO₂ from compressor 100 to gas cooler 200 (that functions as a radiator), that cools the CO₂ compressed by compressor 100 through heat exchange with outside air. The CO₂ from gas cooler 200 is provided to internal heat exchanger 600, that performs heat exchange between CO₂ discharged from accumulator 500 to be provided to compressor 100 and CO₂ discharged from gas cooler 200. CO₂ from internal heat exchanger 600 is provided to pressure control valve 300 (that functions as a decompressor) and then to evaporator 400 to cool air inside of a passenger compartment. The CO₂ is then provided to accumulator 500 where separated gas phase CO₂ is discharged from accumulator 500 and received by compressor 100 via internal heat exchanger 600 (col. 5, lines 13-40).

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As acknowledged by the Examiner, Kuroda et al. do not disclose or suggest Applicants' claimed features of a refrigerant-water heat exchanger or a power engine that heats water. In addition, Kuroda et al. do not disclose or suggest a refrigerating cycle subsystem that includes "a first decompressor configured to decompress a compressed refrigerant passed through said refrigerant-water heat exchanger" or "a first heat exchanger that performs a first heat exchange between the refrigerant passed through said first decompressor and first air," as recited in claim 1 (emphasis added). Furthermore, Kuroda et al. do not disclose or suggest Applicants' claimed features of "a water cycle subsystem including ... a power engine that heats the water ... a heater core ... arranged downstream of and in proximity to the second heat exchanger to receive the second air modified by flow through said second heat exchanger ... a radiator, separate from said heater core," (emphasis added). Kuroda et al. do not disclose or suggest a refrigerating cycle subsystem that includes a first decompressor between a first heat exchanger and a refrigerant-water heat exchanger or a water cycle subsystem that includes a heater core and a radiator separate from the heater core. Accordingly, Kuroda et al. do not include all of the features of claim 1.

Masahiro et al. disclose, in Fig. 1, a heat pump hot water supplier having a refrigerant circulation circuit including compressor 1, refrigerant-to-water heat exchanger 2, pressure reducing device 3 and evaporator 4 connected in series. Masahiro et al. also disclose a hot water supply circuit including hot water tank 5, circulation pump 6 and refrigerant-to-water heat exchanger 2 connected in series (Abstract). Masahiro et al. do not make up for the deficiencies of Kuroda et al. because they do not disclose or suggest a refrigerating cycle subsystem that includes a first decompressor between a first heat exchanger and a refrigerant-water heat exchanger or a water cycle subsystem that includes a heater core and a radiator separate from the heater core, as recited in claim 1. Thus, Masahiro et al. do not include all of the features of claim 1. Accordingly, allowance of claim 1 is respectfully requested.

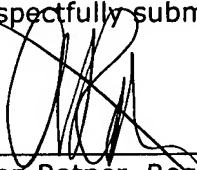
Claims 2, 6-8 and 18-23 include all of the features of claim 1 from which they depend. Accordingly, claims 2, 6-8 and 18-23 are also patentable over the cited art.

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In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,



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Dated: June 13, 2007

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